

CLAIMS

- [c1] 1. A method in a routing device for identifying a destination port for data, the method comprising:
- comparing a domain address associated with the data with a domain address associated with the routing device;
 - when the domain address associated with the data does not match the domain address associated with the routing device, identifying a port based on the domain address associated with the data; and
 - when the domain address associated with the data matches the domain address associated with the routing device, identifying a port based on a virtual address associated with the data
- wherein the identified port is the destination port for the data.
- [c2] 2. The method of claim 1 wherein the identifying of the port based on the domain address associated with the data includes using the domain address to index a domain address table to retrieve an identification of the port.
- [c3] 3. The method of claim 2 wherein each entry of the domain address table contains a port map that designates one or more of the ports of the routing device.
- [c4] 4. The method of claim 3 wherein the identifying of a port based on the domain address associated with the data identifies each of the ports designated by a retrieved port map.

- [c5] 5. The method of claim 1 wherein the identifying of the port based on the virtual address associated with the data includes using the virtual address to index a virtual address table to retrieve an identification of the port.
- [c6] 6. The method of claim 5 wherein each entry of the virtual address table contains a port map that designates one or more of the ports of the routing device.
- [c7] 7. The method of claim 6 wherein the identifying of a port based on the virtual address associated with the data identifies each of the ports designated in a retrieved port map.
- [c8] 8. The method of claim 1 wherein the domain address and virtual address of the data form a virtual identifier.
- [c9] 9. The method of claim 1 wherein the data is a Fibre Channel frame.
- [c10] 10. The method of claim 1 wherein the data is an InfiniBand Channel frame.
- [c11] 11. The method of claim 1 wherein each port of the routing device has its own virtual address table and the virtual address table of the port through which the data is received is used to identify the port.
- [c12] 12. The method of claim 1 wherein the routing device is an interconnect fabric module.
- [c13] 13. The method of claim 1 including transmitting the data through the identified port.

[c14] 14. The method of claim 1 wherein the routing device is Fibre Channel compatible.

[c15] 15. The method of claim 1 wherein the routing device is InfiniBand compatible.

[c16] 16. The method of claim 1 wherein a port identified using the domain address associated with the data is a port through which the data can be sent to a routing device with a domain address that matches the domain address of the data.

[c17] 17. The method of claim 1 wherein the routing device is a switch.

[c18] 18. A routing device comprising:
a component that compares a domain address associated with data to be forwarded through the routing device with a domain address associated with the routing device;
a component that, when the domain address associated with the data does not match the domain address associated with the routing device, identifies a port based on the domain address associated with the data;
a component that, when the domain address associated with the data matches the domain address associated with the routing device, identifies a port based on a virtual address associated with the data;
and
a component that forwards the data through the identified port.

[c19] 19. The routing device of claim 18 including a domain address table with a mapping of domain addresses to destination ports and wherein the component that identifies the port based on the domain address associated with the data

uses the domain address to retrieve an identification of the port from the domain address table.

[c20] 20. The routing device of claim 19 wherein each entry of the domain address table contains a port map that designates one or more of the ports of the routing device.

[c21] 21. The routing device of claim 20 wherein the component that identifies a port based on the domain address associated with the data identifies each of the ports designated by a retrieved port map.

[c22] 22. The routing device of claim 18 including a virtual address table that maps virtual addresses to ports and wherein the component that identifies the port based on the virtual address associated with the data uses the virtual address to retrieve an identification of the port from the virtual address table.

[c23] 23. The routing device of claim 22 wherein each entry of the virtual address table contains a port map that designates one or more of the ports of the routing device.

[c24] 24. The routing device of claim 23 wherein the component that identifies a port based on the virtual address associated with the data identifies each of the ports designated in a retrieved port map.

[c25] 25. The routing device of claim 18 wherein the domain address and virtual address of the data form a virtual identifier.

[c26] 26. The routing device of claim 18 wherein the data is a Fibre Channel frame.

- [c27] 27. The routing device of claim 18 wherein the data is an InfiniBand frame.
- [c28] 28. The routing device of claim 18 wherein each port of the routing device has its own virtual address table and the virtual address table of the port through which the data is received is used to identify the port.
- [c29] 29. The routing device of claim 18 wherein the routing device is an interconnect fabric module.
- [c30] 30. The routing device of claim 18 wherein the routing device is a switch.
- [c31] 31. The routing device of claim 18 wherein the routing device is Fibre Channel compatible.
- [c32] 32. The routing device of claim 18 wherein the routing device is InfiniBand compatible.
- [c33] 33. The routing device of claim 18 wherein a port identified using the domain address associated with the data is a port through which the data can be sent to a routing device with a domain address that matches the domain address of the data.
- [c34] 34. A storage medium containing a virtual identifier for a communication, the virtual identifier comprising:
a virtual address; and
a domain address

wherein the domain address is used to route the communication when a routing device has a domain address that does not match the domain address of the virtual identifier and wherein the virtual address is used to route the communication when the routing device does not have a domain address that matches the domain address of the virtual identifier.

[c35] 35. The storage medium of claim 34 wherein the storage medium is a data transmission medium.

[c36] 36. The storage medium of claim 34 wherein the virtual identifier is a destination identifier.

[c37] 37. The storage medium of claim 34 wherein the virtual identifier is a source identifier.

[c38] 38. The storage medium of claim 34 wherein the virtual identifier is part of a frame.

[c39] 39. The storage medium of claim 38 wherein the frame is Fibre Channel compatible.

[c40] 40. The storage medium of claim 38 wherein the frame is InfiniBand compatible.

[c41] 41. A method in a network of routing devices for routing communications, the method comprising:
receiving a communication at the network, the communication having a virtual identifier with a domain address and a virtual address that identifies a destination;

routing the received communication to the destination in accordance with the domain address when the domain address of the received communications does not match the domain address of a routing device; and

routing the received communication to the destination in accordance with the virtual address when the domain address of the received communications does not match the domain address of a routing device.

[c42] 42. The method of claim 41 wherein the network comprising a collection of routing devices, each routing device being assigned to a domain with a domain address.

[c43] 43. The method of claim 41 wherein the network is a Fibre Channel network.

[c44] 44. The method of claim 41 wherein the network is an InfiniBand network.

[c45] 45. The method of claim 41 wherein the routing devices are interconnect fabric modules.

[c46] 46. The method of claim 41 wherein a routing device has a domain address table that maps domain addresses to ports of the routing device.

[c47] 47. The method of claim 46 wherein each port has its own domain address table.

[c48] 48. The method of claim 41 wherein a routing device has a virtual address table that maps virtual addresses to ports of the routing device.

[c49] 49. The method of claim 48 wherein each port has its own virtual address table.

[c50] 50. A routing device comprising:
means for identifying a port based on a domain address associated with a communication when the domain address associated with the communication does not match a domain address associated with the routing device;
means for identifying a port based on a virtual address associated with the communication when the domain address associated with the communication matches the domain address associated with the routing device; and
means for forwarding the communication via the identified port.

[c51] 51. The routing device of claim 50 including means for mapping domain addresses to ports and wherein the means for identifying a port based on the domain address associated with the communication uses the domain address to retrieve an identification of the port from the mapping.

[c52] 52. The routing device of claim 49 wherein each mapping includes a port map that designates one or more of the ports of the routing device.

[c53] 53. The routing device of claim 52 wherein the means for identifying a port based on the domain address associated with the communication identifies each of the ports designated by a port map.

[c54] 54. The routing device of claim 50 including means for mapping virtual addresses to ports and wherein the means for identifying the port based on the virtual address associated with the communication uses the virtual address to retrieve an identification of the port from the mapping.

[c55] 55. The routing device of claim 54 wherein each mapping includes a port map that designates one or more of the ports of the routing device.

[c56] 56. The routing device of claim 55 wherein the means for identifying a port based on the virtual address associated with the communication identifies each of the ports designated in a port map.

[c57] 57. The routing device of claim 50 wherein the domain address and virtual address of the communication form a virtual identifier.

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